NOAA
R 330
McARTHUR II

TABLE OF OFFSETS FOR SIDE BLOCKS
INTERVALS GIVEN IN INCREMENTS OF 8'-0"

NO. 1 DOCKING POSITION-AFTER SIDE OF NO. 1 BLOCK 55'-9 FROM REF PT

SIDE	BLK NO	FWD OF REF PT	PORT A +H	+V	PORT B +H	+V	STBD A,B,C & D +H,-V
P/S	1	53'-5	11'-9	4'-5	14'-3	4'-10	+4 3/16"
P/S	2	61'-9	15'-3	3'-8	18'-9	4'-0	+2 11/16"
P/S	3	69'-9	15'-3	2'-7	18'-9	3'-0	+1 9/16"
P/S	4	77'-2	15'-3	2'-1	18'-9	2'-6	+3/8"
P/S	5	85'-5	15'-3	2'-0	18'-9	2'-5	-1/16"
P/S	6	93'-5	15'-3	2'-0	18'-9	2'-5	–
P/S	7	101'-9	15'-3	2'-0	18'-9	2'-5	–
P/S	8	109'-9	15'-3	2'-0	18'-9	2'-5	–
P/S	9	117'-9	15'-0	2'-0	18'-6	2'-5	+1/4"
P/S	10	125'-9	15'-3	2'-0	18'-9	2'-5	+1/2"
P/S	11	133'-9	15'-3	2'-0	18'-9	2'-5	+13/16"
P/S	12	141'-8	13'-5	2'-0	15'-11	2'-3	+1 7/16"

TABLE OF OFFSETS FOR SIDE BLOCKS
INTERVALS GIVEN IN INCREMENTS OF 12'-0

NO. 1 DOCKING POSITION-AFTER SIDE OF NO. 1 BLOCK 55'-9 FROM REF PT

SIDE	BLK NO	FWD OF REF PT	PORT A +H	+V	PORT B +H	+V	STBD A,B,C & D +H,-V
P/S	1	53'-5	11'-9	4'-0	14'-3	4'-5	-3 1/2"
P/S	2	63'-9	15'-3	3'-4	18'-9	3'-9	-2 1/2"
P/S	3	77'-2	15'-3	2'-5	18'-9	2'-9	+1 7/16"
P/S	4	79'-9	15'-3	2'-1	18'-9	2'-5	-5/16"
P/S	5	89'-9	15'-3	2'-0	18'-9	2'-5	–
P/S	6	95'-5	15'-3	2'-0	18'-9	2'-5	–
P/S	7	103'-9	15'-3	2'-0	18'-9	2'-5	–
P/S	8	111'-9	15'-3	2'-0	18'-9	2'-5	+1/16"
P/S	9	119'-9	15'-0	2'-0	18'-6	2'-5	+5/16"
P/S	10	127'-9	15'-3	2'-0	18'-9	2'-5	+9/16"
P/S	11	135'-9	15'-3	2'-0	18'-9	2'-5	+7/8"
P/S	12	143'-9	13'-5	2'-0	15'-11	2'-1	+1 3/16"

TABLE OF OFFSETS FOR SIDE BLOCKS
INTERVALS GIVEN IN INCREMENTS OF 8'-0"

NO. 2 DOCKING POSITION-AFTER SIDE OF NO. 2 BLOCK 57'-9 FROM REF PT

SIDE	BLK NO	FWD OF REF PT	PORT A +H	+V	PORT B +H	+V	STBD A,B,C & D +H,-V
P/S	1	57'-9	11'-9	3'-8	14'-3	4'-0	-1 1/4"
P/S	2	65'-9	15'-3	2'-5	18'-9	2'-8	-2 1/4"
P/S	3	73'-9	15'-3	2'-4	18'-9	2'-8	-1"
P/S	4	81'-5	15'-3	2'-1	18'-9	2'-5	-5/8"
P/S	5	89'-9	15'-3	2'-0	18'-9	2'-5	–
P/S	6	97'-5	15'-3	2'-0	18'-9	2'-5	–
P/S	7	105'-9	15'-3	2'-0	18'-9	2'-5	–
P/S	8	113'-9	15'-3	2'-0	18'-9	2'-5	+1/8"
P/S	9	121'-9	15'-0	2'-1	18'-6	2'-5	+3/8"
P/S	10	129'-9	15'-3	2'-0	18'-9	2'-5	+3/4"
P/S	11	137'-9	15'-3	2'-0	18'-9	3'-0	+15/16"
P/S	12	145'-9	13'-5	2'-0	15'-11	2'-3	+1 5/16"

TABLE OF OFFSETS FOR SIDE BLOCKS
INTERVALS GIVEN IN INCREMENTS OF 8'-0"

NO. 1 DOCKING POSITION-AFTER SIDE OF NO. 1 BLOCK 55'-9 FROM REF PT

SIDE	BLK NO	FWD OF REF PT	PORT A +H	+V	PORT B +H	+V	STBD A,B,C & D +H,-V
P/S	1	55'-5	11'-9	4'-0	14'-3	4'-5	-3 1/2"
P/S	2	63'-9	15'-3	3'-4	18'-9	3'-9	-2 1/2"
P/S	3	77'-2	15'-3	2'-5	18'-9	2'-9	+1 7/16"
P/S	4	79'-9	15'-3	2'-1	18'-9	2'-5	-5/16"
P/S	5	89'-9	15'-3	2'-0	18'-9	2'-5	–
P/S	6	95'-5	15'-3	2'-0	18'-9	2'-5	–
P/S	7	103'-9	15'-3	2'-0	18'-9	2'-5	–
P/S	8	111'-9	15'-3	2'-0	18'-9	2'-5	+1/16"
P/S	9	119'-9	15'-0	2'-0	18'-6	2'-5	+5/16"
P/S	10	127'-9	15'-3	2'-0	18'-9	2'-5	+9/16"
P/S	11	135'-9	15'-3	2'-0	18'-9	2'-5	+7/8"
P/S	12	143'-9	13'-5	2'-0	15'-11	2'-1	+1 3/16"

NOTE: DOCKS WHICH HAVE 18'-0" SPACING BEARERS FOR SIDE BLOCKS SHALL USE ODD NUMBERED BLOCKS ONLY.

LIST OF DRAIN PLUGS IN SHELL

NO	SIDE	FWD OF A/T	FRAME	FWD OF A/T REF POINT	DIST OFF CL SHIP
1	S	3" FWD	6	194'-3"	8"
2/3	P/S	3" FWD	12	182'-9"	12"
4	S	3" FWD	18	170'-9"	15"
5	S	3" FWD	24	158'-9"	15"
6/7	P/S	3" FWD	24	158'-9"	8'-3"
8	–	–	–	–	–
9	S	3" FWD	34	138'-9"	15"
10/11	P/S	3" FWD	34	138'-9"	8'-3"
12	P	3" FWD	34	138'-9"	8'-3"
13	–	–	–	–	–
14	S	3" FWD	52	102'-9"	15"
15	–	–	–	–	–
16/17	P/S	3" FWD	60	86'-9"	8'-3"
18/19	P/S	3" FWD	60	86'-9"	17'-9"
20	S	3" FWD	66	74'-3"	15"
21/22	P/S	3" FWD	66	74'-9"	7'-11"
23	P	3" FWD	66	74'-9"	17'-9"
24	S	3" FWD	66	74'-9"	37'-9 15/16"
25	–	–	–	–	–
26/27	P/S	3" A/T	66	74'-3"	7'-11"
28	P/S	3" A/T	66	74'-3"	17'-9"
29	S	3" A/T	66	74'-3"	37'-9 15/16"
30/31	P/S	3" A/T	72	62'-3"	15"
32/33	P/S	3" A/T	72	62'-3"	10'-3"
34/35	P/S	3" A/T	72	62'-3"	17'-3"
36/37	P/S	3" A/T	86	34'-3"	15"
38	C	8" A/T	93	25'-10"	0
39	P	8" A/T	92	22'-3"	11"
40/41	P/S	12" A/T	92	21'-8"	–
42/43	P/S	8" A/T	84	47'-11"	–
44/45	P/S	5 1/2" FWD	98	12'-11 3/8"	RUDDER CL. PORT/STBD RUDDER DRAIN PLUGS
46/47	P/S	5 1/2" A/T	98	10'-5 3/8"	RUDDER CL. PORT/STBD RUDDER DRAIN PLUGS
48/49	P/S	2" FWD	85	38'-3"	RUDDER CL. SHAFT TUBE
50/51	P/S	8" FWD	99	7'-9"	RUDDER CL. RUDDER FILL PLUGS
52/53	P/S	8" FWD	97	11'-10"	RUDDER CL. RUDDER TELL PLUGS

NOTE: ABBREVIATION UTILIZED THROUGHOUT: DP= DRAIN PLUG

BEARING ON BLOCKS

SUPPORT	BEARING ON SHELL PLATING 8'-0" SPACED BEARERS	12'-0" SPACED BEARERS	18'-0" SPACED BEARERS
SIDE BLOCKS 18" x 30" (TOTAL P/S)	12,800 SQ IN 90 SQ FT	8,640 SQ IN 60 SQ FT	6,480 SQ IN 45 SQ FT
* KEEL BLOCKS 36" x 43" (35)	21,220 SQ IN 175 SQ FT	21,220 SQ IN 175 SQ FT	21,220 SQ IN 175 SQ FT
TOTAL BEARING	34,100 SQ IN 265 SQ FT	33,860 SQ IN 235 SQ FT	27,680 SQ IN 220 SQ FT
BEARING PER SQ IN BLOCKING	134.1 LBS	151.2 LBS	181.6 LBS
BEARING PER SQ FT BLOCKING	8.87 TONS	9.72 TONS	10.36 TONS

* NOTE: KEEL BLOCK BEARING AREA BASED ON A 24 INCH WIDTH OF DECK. FULL LOAD DISPLACEMENT 2,285 LONG TONS OR 5,118,400 LBS.

LIST OF ALL OPENINGS IN SHELL BELOW DWL

ITEM NO	SERVICE	SIZE	REMOVABLE PLATE	SIDE	FWD OF A/T	TRANS'	FWD OF AT REF POINT	DIST OFF CL SHIP	FLUSH/ PROJ OF PLATE	REFERENCE
1	SEA CHEST	18 1/2" x 24 1/2"	–	P	12 FWD	69	109'-6 1/8"	9'-3 5/8"	–	8
2	SEA CHEST	18 1/2" x 24 1/2"	–	S	12 FWD	69	109'-6 1/8"	13'-3"	–	8
3	BOW THRUSTER	62" DIA	–	P/S	3 FWD	9	198'-6 1/8"	68"	6"	6
4	SONAR	6" DIA	10 1/4" DIA	S	12" AFT	32	143'-6 1/8"	35"	3"	–
5	HYDROPHONE	6 5/8" DIA	–	S	7 1/2" FWD	28	–	–	–	–
6	HYDROPHONE	6 5/8" DIA	–	S	7 1/2" FWD	28	–	–	–	–
7	TRANSDUCER	18 7/8" DIA	–	S	11 5/8" AFT	25	–	–	–	–
8	TRANSDUCER	7 7/8" DIA	–	S	7 1/4" FWD	26	–	–	–	–
9	TRANSDUCER	4 3/4" DIA	–	S	7 1/4" FWD	26	–	–	–	–
10	TRANSDUCER	2 7/2" DIA	–	S	4 5/8" FWD	27	–	–	–	–
11	TRANSDUCER	2 1/2" DIA	–	S	4 5/8" FWD	27	–	–	–	–
12	TRANSDUCER	24 3/4" DIA	–	S	–	27	–	–	–	–
13	DOPPLER SPEED LOG	17" DIA	–	S	11 5/8" FWD	29	–	–	–	–
14	TRANSDUCER	14 1/2" DIA	–	S	11 1/4" AFT	29	–	–	–	–
15	TRANSDUCER	14 1/2" DIA	–	S	11 1/4" AFT	29	–	–	–	–
16	TRANSDUCER	11" DIA	–	S	11 1/2" AFT	30	–	–	–	–
17	CABLE TRUNK	10" DIA	12 DIA	S	12" FWD	28	–	–	12"	–
18	SUCTION PIPE	–	–	–	–	–	–	–	–	–
19	DISCHARGE PIPE	–	–	P/S	10" FWD	58	–	–	–	–
20	TRANSDUCER (BI-RAKED OFF)	–	–	S	–	24 1/2	–	–	–	–
21	SEA CHEST	–	–	P	–	35/36	–	–	–	–

* NOTE: ITEMS ARE LOCATED IN PDP. THE BOTTOM OF FAIRING IS 19 1/2" BELOW THE BOTTOM OF THE KEEL

TABLE OF DISPLACEMENT AND OTHER PROPERTIES FOR DOCKING

MEAN DRAFT (FT)	DISPLACEMENT (LONG TONS)	NO CORRECTIONS FOR TRIM: MOMENT TO CHANGE TRIM 1 INCH (FOOT TONS)	LCB AFT OF F.P. (FT)	TONS PER INCH IMMERSION	LONGITUDINAL CENTER OF FLOATATION (FT): AFT OF F.P.
13.0	1,848.59	224.51	98.67	17.58	109.02
13.5	1,905.73	232.28	99.24	17.79	109.52
14.0	2,063.10	240.40	99.79	17.99	110.07
14.5	2,171.63	248.45	100.32	18.19	110.61
15.0	2,280.32	256.74	100.82	18.39	111.11
15.25	2,335.96	260.34	101.07	18.47	111.35
12.0	1,644.51	208.08	97.62	16.60	105.34
12.5	1,740.58	224.88	98.12	17.08	107.21

CRITICAL DIMENSIONS

LENGTH BETWEEN PERPENDICULARS	194'-0"
LENGTH OVERALL	224'-0"
BREADTH (MOLDED)	43'-0"
FRAME SPACING	2'-0"
FIRST SIDE BLOCK (S) FROM STEM REF POINT	53'-5"
NO. 1 DOCKING POSITION	55'-9"
NO. 2 DOCKING POSITION	57'-9"
NO. 3 DOCKING POSITION	53'-9"
END OF SKEG	24'-11 1/8"

GENERAL NOTES

1. DRAFT MARKS
(A) AMIDSHIPS MARKS REPRESENT NAVIGATIONAL DRAFTS AND HEIGHT ABOVE BOTTOM OF FLAT KEEL AMIDSHIPS EXTENDED.
(B) CORRECTION TO KEEL DRAFT READINGS FOR CALCULATIVE PURPOSES: NONE

2. DIMENSIONS
(A) LONGITUDINAL LOCATIONS OF ALL ITEMS ARE GIVEN FROM THE STERN REFERENCE POINT (AFTER END OF MAIN DOCK AT CENTERLINE).
(B) HEIGHTS OF ALL ITEMS ARE GIVEN FROM THE BOTTOM OF KEEL AMIDSHIPS EXTENDED.
(C) LONGITUDINAL LOCATIONS & HEIGHTS OF SIDE BLOCKS ARE TAKEN TO THE AFT SIDE OF THE BLOCKS.

3. COMPLETE PAINTING OF HULL
(A) IN ORDER TO CLEAN & PAINT THE ENTIRE BOTTOM OF THE VESSEL IN THREE SUCCESSIVE DOCKINGS THE FOLLOWING POSITIONS OF THE VESSEL ARE NECESSARY:
(1) POSITION NO 1
AFTER END OF MAIN DOCK (POINT OF REFERENCE) IS PLACED 55'-9 AFT OF AFTER SIDE OF NO 1 SIDE BLOCK.
(2) POSITION NO 2
AFTER END OF MAIN DOCK (POINT OF REFERENCE) IS PLACED 57'-9 AFT OF AFTER SIDE OF NO 1 SIDE BLOCK.
(3) POSITION NO 3
AFTER END OF MAIN DOCK (POINT OF REFERENCE) IS PLACED 53'-9 AFT OF AFTER SIDE OF NO 1 SIDE BLOCK.
(B) REPEAT CYCLE OF POSITIONS, ASCERTAIN FROM VESSEL THE POSITION OF VESSEL AT ITS LAST DOCKING.

4. PROPELLERS AND OTHER APPENDAGES
(A) IN DETERMINING THE HEIGHT OF KEEL BLOCKS, CARE IS TO BE TAKEN THAT ALL APPENDAGES CLEAR THE BOTTOM OF THE DOCK.
(B) TRIM BY STERN TABLE OMITTED (PROPELLER BLADES WILL CLEAR BOTTOM OF DOCK SUFFICIENTLY UNDER ALL CONDITIONS OF TRIM).

5. BLOCKING
(A) THE BLOCKING SHOWN ON THIS PLAN IS THAT REQUIRED FOR BLOCKING (A) DOCK GROUNDED UNDAMAGED CONDITIONS FOR 8'-0, 12'-0, OR 18'-0 SPACED BEARERS IN DRYDOCK.
(B) KEEL BLOCKS
(1) KEEL BLOCKS SHALL BE ARRANGED IN PIERS CONSISTING OF THREE 14 x 14 HARD WOOD TIMBERS MOUNTED WITH 2 INCH MINIMUM THICKNESS SOFT WOOD CAP BLOCKS. LONGITUDINAL SPACING TO BE 6'-0 CENTER TO CENTER WITH 30 INCH CLEAR SPAN BETWEEN PIERS.
(2) NO BILGORS OR SHORES ARE REQUIRED UNDER ORDINARY CONDITIONS OF DOCKING UNDER THE BOW FORWARD OF FR 12 AND UNDER THE STERN AFT OF FR 84.
(3) IN THE EVENT THAT PIER BLOCK ARRANGEMENT IS NOT PROVIDED KEEL BLOCKS SHALL BE SPACED 4'-0 CENTER TO CENTER BETWEEN FR 12& FR 84. CRIB BLOCKS UNDER BOW & SKEG FOR ABOUT 12'-0.
(C) SIDE BLOCKS (SHOWN ON THE PLAN IN ALL THREE DOCKING POSITIONS ARE INDICATED FOR 8'-0 SPACED BEARERS (P) AND 12'-0 SPACED BEARERS (S).
(1) SIDE BLOCKS SHALL BE LOCATED P & S UNDER LONGITUDINAL BHD AT 17'-6 OFF CENTERLINE AND LONGITUDINAL SPACING AT 12'-0 & 14'-6 OFF CENTERLINE AS INDICATED ON TABLE OF OFFSETS IN ACCORDANCE WITH BEARER SPACING OF DOCK.
(2) SOFT WOOD CAPS ARE REQUIRED.
(3) DIRECTION OF BEVEL ON BLOCKS IN 18 INCHES IS DOWN (-) OR UP (+) FROM THE HEIGHT GIVEN AT THE AFTER SIDE OF THE BLOCK IN THE TABLES OF OFFSETS.
(4) THE TABLES OF OFFSETS WILL PERMIT DOCKING FROM PLAN IN DOCKS WHICH HAVE KEEL 8'-0, 12'-0, OR 18'-0 BEARER SPACING. BLOCK SPACING OF 12'-0 OR 18'-0 ONLY ARE REQUIRED, WHEN DOCKING VESSELS OFF CENTER IN DOCKS WHICH HAVE 8'-0 BEARER SPACING IT IS PERMISSIBLE TO STAGGER THE BLOCKS USING ODD ON ONE SIDE AND EVEN ON THE OTHER.
(5) SIDE BLOCKS ARE NUMBERED FROM AFT FORWARD WITH THE AFTER BLOCK AS NO. 1.
(6) UNIVERSAL CAP SIDE BLOCKS MAY BE USED IN LIEU OF FITTED BLOCKS.

6. DRAIN PLUGS 8, 13, 15 NOT OBSERVED ON TODD SHIPYARD SURVEY FEB. 2005. POSSIBLY MODEL.

REVISIONS

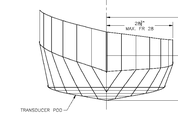
REV	SHT	ZONE	ITEM	DESCRIPTION	DATE	APVD
A	1	ALL	1.	REDRAWN IN CADD.	7/04	
			2.	ADDED NEW TRANSDUCER FAIRING PR 24-33		
B	1	ALL	1.	GENERAL REVISIONS BASED ON HULL SURVEY PERFORMED AT TODD SHIPYARD IN FEB. 2005	8/05	

REFERENCES

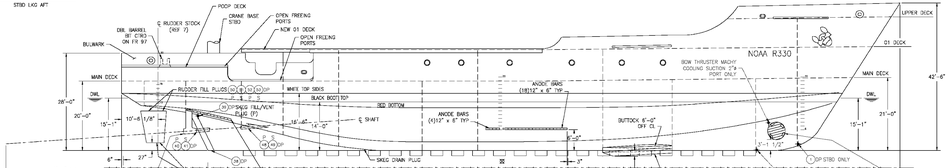
NO	TITLE	DRAWING NO
1	LINES & OFFSETS	801-0000301
2	CURVES OF FORM	801-0000309
3	SHELL EXPANSION	111-0000307
4	KEEL	114-0000323
5	SHAFT STRUTS	114-0000324
6	HULL STRUCTURAL PLAN	185-0000209
7	RUDDER & RUDDER TRUNK A & D	582-0000330
8	SEA CHESTS	163-0000331
9	WORKING ARRANGEMENT	580-0000109
10	DRAFT MARKS	803-0000129
11	PROPULSION SHAFTING ASSY	245-0000225

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
OFFICE OF NOAA CORPS OPERATIONS

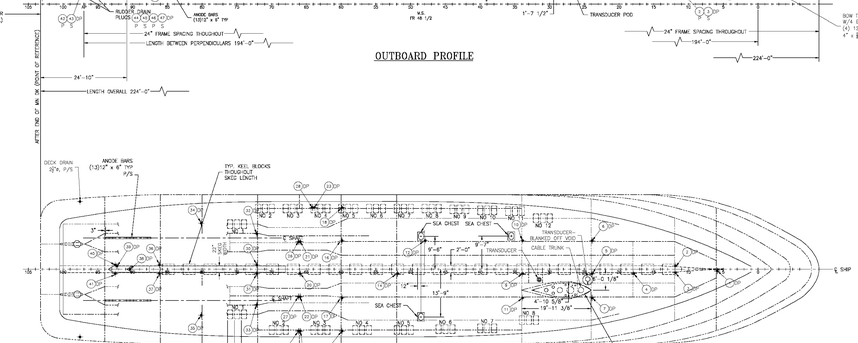
ART ANDERSON	NOAA SHIP	McARTHUR II	
4 ASSOCIATES			
TEL: (757) 362-2841			
DSGN L. WINGARD	7/04	DOCKING PLAN	
CHK M. WOOD	7/04		
DRW L. WINGARD	7/04		
CHK C. STACY	7/04		
NOAA APPROVAL		SIZE: D	CAGE CODE: 81H29
		DRAWING NUMBER: MC-085-002	REV: B
		SCALE: 1/8"=1'-0"	SHEET 1 OF 1

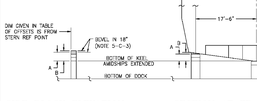


TRANSDUCER POD
STBD LKG AFT

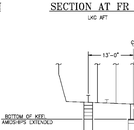


OUTBOARD PROFILE

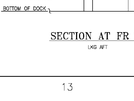

DECK DRAIN 12"ø, P/S
ANODE BARS (1-1/2" x 6" TYP P/S
TYP. KEEL BLOCKS (SEE TABLE FOR EXACT SIZES) LENGTH
SEA CHEST
SEA CHEST
TRANSDUCER-RAKED OFF VDD
CABLE TRUNK
TRANSDUCER POD
℄ SHIP
INTERVALS OF SIDE BLOCKING SHOWN 8'-0" ON PORT SIDE, 12'-0" ON STBD SIDE
NO. 3 DOCKING POSITION 53'-9"
NO. 1 DOCKING POSITION 55'-9"
NO. 2 DOCKING POSITION 57'-9"



SIDE BLOCK ELEVATION
LKG AMID

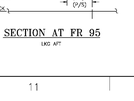


SECTION AT FR 50
LKG AFT



SECTION AT FR 75
LKG AFT

SECTION AT FR 32
LKG AFT



SECTION AT FR 95
LKG AFT